

IV. Remarks**A. Summary of Amendments**

Withdrawn claims 1-19 have been canceled.

New Claims 29-43 have been added.

B. Rejection under 35 U.S.C. §102**1. Claims 20-25**

The Action rejects Claims 20-25 as being anticipated by U.S. Patent No. 5,432,000 to Young, Sr. et al. (hereinafter, "Young").

Independent Claim 20 is directed to a system for manufacturing an insulation product. The system includes a conveyor for conveying an insulation sheet containing randomly oriented fibers bonded together, the sheet having first and second major surfaces and a pair of side portions. The system also includes means for applying a layer of bicomponent fibers to at least one of said major surfaces, each of said bicomponent fibers including first component and second component portions, and a heater disposed to heat said layer and said sheet, thereby forming a nonwoven layer meltbonded to said at least one of said major surfaces.

In rejecting Claim 20, the Examiner concludes that the hoppers 116 and 110 apply a layer of bicomponent fibers on sheet 120. Applicants respectfully disagree. As the Examiner recognizes, wood pulp fibers are provided to hopper 116 from conduit 114, and separate "treated fibers" are provided to hopper 110. These fibers are mixed in "conventional fiber blending unit 112." (Column 20, Lines 32-34). As individual fibers, these fibers are certainly not "bicomponent fibers." Further, as discussed in more detail below, simply mixing disparate fibers does not make the fibers (or their mixture) "bicomponent fibers."

As explained in the present application, ¶ 20, bicomponent fibers are generally formed when two polymers are extruded from the same spinnerette with both polymers contained within

the same filament. Alternatively, bicomponent fibers can also include an inorganic component. Bicomponent fibers allow for exploitation of capabilities not existing in either polymer alone. In one embodiment, the bicomponent fibers each have a first sheath component portion that surrounds a core material second component portion, but other configurations are also available, such as the so-called “side-by-side” configuration where two connected components lie side-by-side or “islands-in-the-sea” fibers where areas of one polymer can be found in the matrix of a second polymer. Cospun fibers are another example, which include a group of filaments of different polymers but a single component per filament, spun from the same spinnerette. As explained in the application, the term “bicomponent fiber” means both traditional bicomponent fibers described above and their close relatives, e.g., cospun fibers.

One of ordinary skill in the art would not consider a mixture of disparate fibers, as performed by Young, in a web 118 to be “bicomponent fibers” as defined in the present application, as understood in the art, and as recited in claim 20, i.e., “bicomponent fibers including first *component* and second *component* portions.” (emphasis added) Therefore, it is submitted that Claim 20 is not anticipated by Young and is, therefore, allowable. Claims 21-25 depend from Claim 20 and are, therefore, also not anticipated by Young. Reconsideration and withdrawal of the rejection of Claims 20-25 as being anticipated by Young are respectfully requested.

2. Claims 20-27

The Action rejects Claims 20-27 as being anticipated by U.S. Patent No. 2,543,101 to Francis. In the rejection, the Examiner concludes that chamber 9 deposits bicomponent fibers. Chamber 9 mixes “potentially adhesive fibers” formed in chamber 10 with “non-adhesive fibers” where they are “scattered about” and “mixed together before settling out.” (Column 8, Line 71-Column 9, Line 5). As explained above, simply mixing disparate fibers does not make the fibers of the mixture “bicomponent fibers.” Therefore, Francis does not include the recited “means for applying a layer of bicomponent fibers to at least one of said major surfaces, each of said bicomponent fibers including first component and second component portions” as claimed in

Claims 20. For at least this reason, it is submitted that Claim 20 and Claims 21-27, which depend from Claim 20, are not anticipated by Francis and are allowable thereover.

Reconsideration and withdrawal of the rejection of these claims are respectfully requested.

C. Claim Rejection under 35 U.S.C. § 103

The Action rejects Claim 28 as being obvious from Young in view of U.S. Patent No. 2,744,045 to Collins.

The Action also rejects Claim 28 as being obvious from Francis in view of Collins.

Claim 28 depends from Claim 20, which is allowable as set forth above, and is, therefore, also allowable. Reconsideration and withdrawal of the rejections of Claim 28 are respectfully requested.

D. New Claims

New Claims 29-43 have been added to the application, examination of which is respectfully requested. Support for these claims can be found at, for example, FIGS. 2-3 and Paragraphs 20-33 of the application as filed.

Independent Claims 29 and 38 are each directed to a system for applying a facing layer to an insulation product. As recited in the claims, the facing layer on the insulation product (i.e., an insulation mat or board) is formed from deposited bicomponent fibers. It is submitted that none of the art of record teaches or suggests singularly or in combination such a system as defined in these claims and the claims that depend therefrom. For example, the art of record does not teach or suggest depositing bicomponent fibers on the first major surface of an “insulation mat or board” comprising randomly oriented fibers bonded together, or heating deposited fibers to form “a non-woven facing layer” meltbonded to the first major surface.

Dependent claims 30-37 and 39-43 depend from independent Claims 29 and 38, respectively, and are, therefore, allowable over the art of record for at least same reasons as

Claims 29 and 37. Nonetheless, Applicants would like to take this opportunity to highlight some additional features recited in some of these dependent claims.

Dependent Claims 30 and independent claim 38 recite that the second component portion *has a higher melting point than said first component portion*, said heater *heating said layer to a temperature at or above the melting temperature of said first component portion but below the melting temperature of said second component portion*, whereby said first component portion of said bicomponent fibers is meltbonded to said randomly oriented fibers in said insulation product. It is submitted that bicomponent fibers having these recited features and a heater that heats in the recited manner are neither taught nor suggested by the art of record.

Dependent Claims 33 and 41 recite that the bicomponent fibers comprise sheath-core bicomponent fibers, side-by-side bicomponent fibers, islands-in-the-sea bicomponent fibers, cospun fibers, or a combination thereof. It is submitted that no such fibers are taught or suggested by the art of record.

Dependent Claims 35 and 42 recite that the deposition chamber includes at least one opening in a side thereof coupled to the blower through a hose, *wherein the hose is oriented at an upward orientation toward said top wall*. It is submitted that the art of record neither teaches nor suggests orienting a hose at an upward orientation toward the top wall of a deposition chamber. For example, the hoses 14, 16 of Francis identified by the Examiner are parallel to a top wall of the chamber 9 of Francis, not at an upward orientation.

Dependent Claims 37 and 43 recite that the bicomponent fibers are deposited on said insulation product in an amount less than or equal to 2.5 grams/ft². This amount, as described in the specification, Paragraph 31, is used to form an exemplary facing layer on an insulation product, once heated. This feature is clearly not taught by the art of record identified by the Examiner, particularly since the deposited fibers identified by the Examiner in the cited references form the body of the ultimate product, not a “non-woven facing layer” meltbonded thereto.

V. Conclusion


In view of the foregoing remarks and amendments, Applicant(s) submit that this application is in condition for allowance at an early date, which action is earnestly solicited.

The Commissioner for Patents is hereby authorized to charge any additional fees or credit any excess payment that may be associated with this communication to deposit account 04-1679.

Respectfully submitted,

Dated: _____

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